

K. Hill

P#21

1645

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/196,161D

DATE: 12/12/2000
TIME: 12:57:52

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DEC 27 2000

TECH CENTER 1600/2000

3 <110> APPLICANT: SIN, Yoke Min
4 LAM, Toong Jin
5 GONG, Zhiyuan
7 <120> TITLE OF INVENTION: A RECOMBINANT VACCINE AGAINST FISH INFECTIOUS DISEASES
9 <130> FILE REFERENCE: Applied Research
11 <140> CURRENT APPLICATION NUMBER: 09/196,161D
12 <141> CURRENT FILING DATE: 1998-11-20
14 <150> PRIOR APPLICATION NUMBER: 9803188-3
15 <151> PRIOR FILING DATE: 1998-09-28
17 <160> NUMBER OF SEQ ID NOS: 17
19 <170> SOFTWARE: PatentIn Ver. 2.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 105
23 <212> TYPE: PRT
24 <213> ORGANISM: Ichthyophthirius multifiliis
26 <220> FEATURE:
27 <221> NAME/KEY: MUTAGEN
28 <222> LOCATION: (2)
29 <223> OTHER INFORMATION: A/S WHERE S HAS BEEN DERIVED FROM THE SYNTHETIC
30 GENE.
32 <220> FEATURE:
33 <221> NAME/KEY: MUTAGEN
34 <222> LOCATION: (4)..(105)
35 <223> OTHER INFORMATION: Q - THE GLUTAMINE CODONS TAA AND TAG IN THE
36 ORIGINAL SEQUENCE, HAVE BEEN REPLACED WITH THE
37 UNIVERSAL GLUTAMINE CODONS CAG OR CAA IN THE
38 SYNTHETIC GENE
40 <220> FEATURE:
41 <221> NAME/KEY: MUTAGEN
42 <222> LOCATION: (34)
43 <223> OTHER INFORMATION: V/G WHERE G HAS BEEN DERIVED FROM THE SYNTHETIC
44 GENE.
46 <220> FEATURE:
47 <221> NAME/KEY: MUTAGEN
48 <222> LOCATION: (105)
49 <223> OTHER INFORMATION: V/I WHERE I HAS BEEN DERIVED FROM THE SYNTHETIC
50 GENE.
52 <400> SEQUENCE: 1
53 Gly Ala Ala Gln Gly Glu Ala Asn Gly Asn Gln Pro Phe Ala Ala Asn
54 1 - 5 10 15
56 Asn Ala Ala Arg Gly Ile Cys Val Pro Cys Gln Ile Asn Arg Val Gly
57 20 25 30
59 Ser Val Thr Asn Ala Gly Asp Leu Ala Thr Leu Ala Thr Gln Cys Ser
60 35 40 45
62 Thr Gln Cys Pro Thr Gly Thr Ala Leu Asp Asp Gly Val Thr Asp Val
63 50 55 60
65 Phe Asp Arg Ser Ala Ala Gln Cys Val Lys Cys Lys Pro Asn Phe Tyr

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66 65          70          75          80
68 Tyr Asn Gly Gly Ser Pro Gln Gly Glu Ala Pro Gly Val Gln Val Phe
69                      85          90          95
71 Ala Ala Gly Ala Ala Ala Ala Gly Val
72          100          105
75 <210> SEQ ID NO: 2
76 <211> LENGTH: 316
77 <212> TYPE: DNA
78 <213> ORGANISM: Ichthyophthirius multifiliis
80 <220> FEATURE:
81 <221> NAME/KEY: CDS
82 <222> LOCATION: (1)..(315)
84 <400> SEQUENCE: 2
85 ggt gct gct taa gga gaa gct aat ggt aat taa cct ttc gca gca aat 48
86 Gly Ala Ala Gln Gly Glu Ala Asn Gly Asn Gln Pro Phe Ala Ala Asn
87 1          5          10          15
89 aat gct gct aga ggt ata tgt gta cca tgc caa ata aac aga gta ggc 96
90 Asn Ala Ala Arg Gly Ile Cys Val Pro Cys Gln Ile Asn Arg Val Gly
91          20          25          30
93 tct gtt acc aat gca ggt gac tta gct act tta gcc aca taa tgc agt 144
94 Ser Val Thr Asn Ala Gly Asp Leu Ala Thr Leu Ala Thr Gln Cys Ser
95          35          40          45
97 act taa tgt cct act ggc act gca ctt gat gat gga gtg aca gat gtt 192
98 Thr Gln Cys Pro Thr Gly Thr Ala Leu Asp Asp Gly Val Thr Asp Val
99          50          55          60
101 ttt gat aga tca gcc gca taa tgt gtt aaa tgc aaa cct aac ttt tac 240
102 Phe Asp Arg Ser Ala Ala Gln Cys Val Lys Cys Lys Pro Asn Phe Tyr
103 65          70          75          80
105 tat aat ggt ggt tct cct taa ggt gaa gct cct ggc gtt taa gtt ttt 288
106 Tyr Asn Gly Gly Ser Pro Gln Gly Glu Ala Pro Gly Val Gln Val Phe
107          85          90          95
109 gct gct ggt gct gcc gct gca ggt gtt g 316
110 Ala Ala Gly Ala Ala Ala Ala Gly Val
111          100          105
114 <210> SEQ ID NO: 3
115 <211> LENGTH: 6
116 <212> TYPE: PRT
117 <213> ORGANISM: Ichthyophthirius multifiliis
119 <400> SEQUENCE: 3
120 Gly Glu Ala Asn Gly Asn
121 1          5
124 <210> SEQ ID NO: 4
125 <211> LENGTH: 34
126 <212> TYPE: PRT
127 <213> ORGANISM: Ichthyophthirius multifiliis
129 <400> SEQUENCE: 4
130 Pro Phe Ala Ala Asn Asn Ala Ala Arg Gly Ile Cys Val Pro Cys Gln
131 1          5          10          15
132 Ile Asn Arg Val Gly Ser Val Thr Asn Ala Gly Asp Leu Ala Thr Leu

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134 Ala Thr
137 <210> SEQ ID NO: 5
138 <211> LENGTH: 20
139 <212> TYPE: PRT
140 <213> ORGANISM: Ichthyophthirius multifiliis
142 <400> SEQUENCE: 5
143 Cys Pro Thr Gly Thr Ala Leu Asp Asp Gly Val Thr Asp Val Phe Asp
144   1          5          10          15
145 Arg Ser Ala Ala
146          20
149 <210> SEQ ID NO: 6
150 <211> LENGTH: 15
151 <212> TYPE: PRT
152 <213> ORGANISM: Ichthyophthirius multifiliis
154 <400> SEQUENCE: 6
155 Cys Val Lys Cys Lys Pro Asn Phe Tyr Tyr Asn Gly Gly Ser Pro
156   1          5          10          15
159 <210> SEQ ID NO: 7
160 <211> LENGTH: 6
161 <212> TYPE: PRT
162 <213> ORGANISM: Ichthyophthirius multifiliis
164 <400> SEQUENCE: 7
165 Gly Glu Ala Pro Gly Val
166   1          5
169 <210> SEQ ID NO: 8
170 <211> LENGTH: 11
171 <212> TYPE: PRT
172 <213> ORGANISM: Ichthyophthirius multifiliis
174 <400> SEQUENCE: 8
175 Val Phe Ala Ala Gly Ala Ala Ala Ala Gly Val
176   1          5          10
180 <210> SEQ ID NO: 9
181 <211> LENGTH: 316
182 <212> TYPE: DNA
183 <213> ORGANISM: Ichthyophthirius multifiliis
185 <220> FEATURE:
186 <221> NAME/KEY: CDS
187 <222> LOCATION: (1)..(315)
189 <400> SEQUENCE: 9
190 gga tcc gct cag gga gaa gct aat ggt aat cag cct ttc gca gca aat 48
191 Gly Ser Ala Gln Gly Glu Ala Asn Gly Asn Gln Pro Phe Ala Ala Asn
192   1          5          10          15
194 aat gct gct aga ggt ata tgt gta cca tgc caa ata aac aga gta ggc 96
195 Asn Ala Ala Arg Gly Ile Cys Val Pro Cys Gln Ile Asn Arg Val Gly
196          20          25          30
198 tct ggt acc aat gca ggt gac tta gct act tta gcc aca caa tgc agt 144
199 Ser Gly Thr Asn Ala Gly Asp Leu Ala Thr Leu Ala Thr Gln Cys Ser
200          35          40          45

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202 act cag tgt cct act ggc act gca ctt gat gat gga gtg aca gat gtt 192
203 Thr Gln Cys Pro Thr Gly Thr Ala Leu Asp Asp Gly Val Thr Asp Val
204      50      55      60
206 ttt gat aga tca gcc gca cag tgt gtt aaa tgc aaa cct aac ttt tac 240
207 Phe Asp Arg Ser Ala Ala Gln Cys Val Lys Cys Lys Pro Asn Phe Tyr
208      65      70      75      80
210 tat aat ggt ggt tct cct cag ggt gaa gct cct ggc ctt cag gtt ttt 288
211 Tyr Asn Gly Gly Ser Pro Gln Gly Glu Ala Pro Gly Leu Gln Val Phe
212      85      90      95
214 gct gct ggt gct gcc gct gca gga att c 316
215 Ala Ala Gly Ala Ala Ala Ala Gly Ile
216      100      105
219 <210> SEQ ID NO: 10
220 <211> LENGTH: 105
221 <212> TYPE: PRT
222 <213> ORGANISM: Ichthyophthirius multifiliis
224 <400> SEQUENCE: 10
225 Gly Ser Ala Gln Gly Glu Ala Asn Gly Asn Gln Pro Phe Ala Ala Asn
226      1      5      10      15
228 Asn Ala Ala Arg Gly Ile Cys Val Pro Cys Gln Ile Asn Arg Val Gly
229      20      25      30
231 Ser Gly Thr Asn Ala Gly Asp Leu Ala Thr Leu Ala Thr Gln Cys Ser
232      35      40      45
234 Thr Gln Cys Pro Thr Gly Thr Ala Leu Asp Asp Gly Val Thr Asp Val
235      50      55      60
237 Phe Asp Arg Ser Ala Ala Gln Cys Val Lys Cys Lys Pro Asn Phe Tyr
238      65      70      75      80
240 Tyr Asn Gly Gly Ser Pro Gln Gly Glu Ala Pro Gly Leu Gln Val Phe
241      85      90      95
243 Ala Ala Gly Ala Ala Ala Ala Gly Ile
244      100      105
248 <210> SEQ ID NO: 11
249 <211> LENGTH: 66
250 <212> TYPE: DNA
251 <213> ORGANISM: Ichthyophthirius multifiliis
253 <400> SEQUENCE: 11
254 ggcggtacccg ctcagggaga agctaattggt aatcagcctt tcgcagcaaa taatgctgct 60
255 agaggt 66
258 <210> SEQ ID NO: 12
259 <211> LENGTH: 60
260 <212> TYPE: DNA
261 <213> ORGANISM: Ichthyophthirius multifiliis
263 <400> SEQUENCE: 12
264 accggtacca gagcctactc tgtttatttg gcatggtaca catataacctc tagcagcatt 60
267 <210> SEQ ID NO: 13
268 <211> LENGTH: 66
269 <212> TYPE: DNA
270 <213> ORGANISM: Ichthyophthirius multifiliis
272 <400> SEQUENCE: 13

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273 accggtacca atgcaggtga cttagctact ttagccacac aatgcagtac tcagtgctct 60
274 actggc 66
277 <210> SEQ ID NO: 14
278 <211> LENGTH: 59
279 <212> TYPE: DNA
280 <213> ORGANISM: Ichthyophthirius multifiliis
282 <400> SEQUENCE: 14
283 cgtgatctat caaaaacatc tgtaactcca tcatcaagtg cagtgccagt aggacactg 59
286 <210> SEQ ID NO: 15
287 <211> LENGTH: 68
288 <212> TYPE: DNA
289 <213> ORGANISM: Ichthyophthirius multifiliis
291 <400> SEQUENCE: 15
292 cctgatcagc cgcacagtgt gttaaatgca aacctaactt ttactataat ggtggttctc 60
293 ctcaagggt 68
296 <210> SEQ ID NO: 16
297 <211> LENGTH: 69
298 <212> TYPE: DNA
299 <213> ORGANISM: Ichthyophthirius multifiliis
301 <400> SEQUENCE: 16
302 gcgaattcct gcagcgagcag caccagcagc aaaaacctga acgccaggag cttcacctg 60
303 aggagaacc 69
306 <210> SEQ ID NO: 17
307 <211> LENGTH: 17
308 <212> TYPE: DNA
309 <213> ORGANISM: Ichthyophthirius multifiliis
311 <400> SEQUENCE: 17
312 tagcatgycc ttgcag 17
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VERIFICATION SUMMARY

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